

REMARKS

Claims 6-9, 14-23, and 30 are pending and rejected. Claims 13 and 18 have been canceled without prejudice. Applicants reserve their right to prosecute subject matter of the canceled claim in subsequent applications.

Claims 6 and 21 have been amended to delete recitation of the word "endocellulase".

No new matter has been added by these amendments.

Objection to Claim 13

Claim 13 is objected to for being in improper dependent format for allegedly failing to further limit the subject matter of a previous claim. In order to advance prosecution of certain embodiments, claim 13 has been canceled, making this objection moot.

Rejection under 35 U.S.C. § 112, second paragraph, Indefiniteness

Claims 6, 12-13 and 21 are rejected under section 112, second paragraph, as allegedly being indefinite for the recitation of the word "endocellulases".

Applicants respectfully disagree with this rejection, however, in order to advance prosecution of certain embodiments of the invention, the claims have been amended to delete recitation of the word "endocellulase" thereby making this rejection moot. Also claim 13 has been cancelled. Applicants submit the amendment overcomes this rejection, and request its withdrawal.

Rejections under 35 U.S.C. § 112, first paragraph, Written Description

Claims 6-9, 12-23, and 30 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors were in possession of the claimed invention at the time the application was filed. Applicants respectfully disagree with this rejection. In order to advance prosecution of certain embodiments, claims 6 and 21 have been amended to delete recitation of the word "endocellulases" making this rejection moot. Also claims 13 and 18 have been

cancelled. Applicants argue the above amendments and remarks overcome these rejections and request their withdrawal.

Rejections under 35 U.S.C. § 112, ¶ 1: Enablement

Claims 6-9, 13-23, and 30 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly not being enabled by the specification. The Examiner alleges that the specification does not reasonably provide enablement for nucleic acids encoding all cellulases, plants transformed with those cellulases or non-transformed plants that express cellulases. Applicants respectfully disagree.

Enablement of a disclosure “is not precluded by the necessity for some experimentation such as routine screening.” In re Wands, 858 F.2d 731, 736-7 (Fed. Cir. 1988) (citations omitted). The experimentation necessary must not be undue. Id. At 737. Undue experimentation is experimentation that would require a level of ingenuity beyond what is expected from one of ordinary skill in the field. Fields v. Conover, 170 USPQ 276, 279 (CCPA 1971). The factors that can be considered in determining whether an amount of experimentation is undue have been listed in Wands, 858 F.2d at 737. Among these factors are: the amount of effort involved, the guidance provided by the specification, the presence of working examples, the amount of pertinent literature and the level of skill in the art. The test for undue experimentation is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine. Id.

The relevant inquiry for determining whether the scope of the claims is commensurate with the specification is “whether the scope of enablement provided to one of ordinary skill in the art by the disclosure is such as to be commensurate with the scope of protection sought by the claims.” In re Moore, 439 F.2d 1232, 1236 (CCPA 1971) (emphasis added). “A patent need not teach, and preferably omits, what is well known in the art.” Hybridtech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986), cet. Denied, 480 U.S. 947 (1987).

While predictability of the art can be considered in determining whether an amount of experimentation is undue, mere unpredictability of the result of the

experiment is not a consideration. Indeed, the Court of Customs and Patent Appeals has specifically cautioned that the unpredictability of the result of an experiment is not a basis to conclude that the amount of experimentation is undue (see In re Angstadt, 190 USPQ 214 (CCPA 1976)).

The claims as amended are directed to transgenic plants comprising a microbial β -1,4-endoglucanase. The claims do not attempt to claim nucleic acids encoding all cellulases, and do not attempt to claim non-transformed plants that express cellulases.

It is not undue experimentation for one of ordinary skill in the art to transform a plant with a different β -1,4-endoglucanase once the description explains how to perform such task with an exemplary β -1,4-endoglucanase. Therefore, the specification as filed is enabled to those of ordinary skill in the art.

Rejection under 35 USC § 102, Borriss

Claims 6-7, 13, 21 and 30 are rejected under 35 USC § 102(e) as allegedly being anticipated by Borriss et al. (US Patent No. 5,470,725 filed February 1990).

Applicants respectfully disagree with this rejection. However, in order to advance prosecution of certain embodiments, the claims have been amended to recite transgenic plants expressing a β -1,4-endoglucanase. The amended claims are not anticipated by Borriss, and the rejection is overcome.

Rejection under 35 U.S.C. § 103: Bennett

Claims 6-8, 13-26, and 30 remain rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Van Ooyen et al., U.S. Patent No. 5,705,375, filed June 1992, in view of Lao et al. (1991, J. Bacteriol. 173:3397-3407).

A finding of obviousness under § 103 requires a determination of the scope and content of the prior art, the level of ordinary skill in the art, the differences between the claimed subject matter and the prior art, and whether the differences are such that the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. *Graham v. Deere*, 383 U.S. 1 (1966). The relevant inquiry is whether the prior art suggest the invention, and whether the prior art provides one of ordinary skill in the art with a reasonable expectation of success. *In re O'Farrell*,

853 F.2d 894, 903 (Fed. Cir. 1988). Both the suggestion and the reasonable expectation of success must be founded in the prior art and not in the Applicants' disclosure. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). Also, the Examiner must also show why it "would appear" that the references would have been combined. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

Applicants respectfully disagree with this rejection. The claims as presently amended are not obvious from van Ooyen in view of Lao. Van Ooyen describes modifying the carbohydrate content by transforming plants with an amylase. Van Ooyen does not disclose plants transformed with a β -1,4-endoglucanase. There is also no teaching to combine the reference of van Ooyen with Lao. There is no evidence that transforming a plant with an endoglucanase alters the carbohydrate content.

The cited reference does not make obvious the presently claimed invention.

Since Van Ooyen in view of Lao does not teach, much less suggest, all the elements of the presently claimed invention, it does not make obvious the invention.

Therefore, the combined references fail to make obvious the presently claimed invention because there is no suggestion to combine the references to teach the invention as presently claimed. The above amendments and remarks overcome this rejection, and Applicants request its withdrawal.

Applicants respectfully acknowledge that claims 9 and 20 are free of the prior art.

CONCLUSION

Applicants point out that the above remarks and amendments overcome the rejections. Reconsideration of the application and allowance of all pending claims is earnestly solicited.

Should the Examiner wish to discuss any of the above in greater detail or deem that further amendments should be made to improve the form of the claims, the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,



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